

CITY OF BRYAN, TEXAS
TRAFFIC SIGNAL STANDARDS

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Traffic signal installations within the City of Bryan, Texas shall have the following general characteristics:

DESIGN FEATURES

Traffic signals installed at intersections shall be installed on cantilever arms. Span wire installations will not be permitted except in very unusual circumstances. All corners of intersections will be illuminated, with luminaires installed either on traffic signal poles or on poles already existing at the intersection. Pedestrian signals with push buttons shall be installed; however, approved ambulatory ramps consistent with American Disabilities Act (ADA) requirements must be present at the intersection. All traffic signal heads shall be mounted horizontally (unless mounted on poles) and have 12-inch diameter LED lenses. Controllers shall be ground-mounted. Video detection systems shall be installed for all approaches. Confirmation lights shall be installed at all intersections. Priority control system detectors shall be installed on approaches designated by the city. Street name signs shall be installed on all mast arms.

The following is additional and more specific information concerning signal hardware for traffic signal installations.

TRAFFIC SIGNAL POLES

Composition: Steel

Color: Black

Height: 30 feet (with luminaire)
16 feet (without luminaire)

SIGNAL MAST ARMS

Composition: Steel

Color: Black

Length: As required.

PEDESTAL POLES

Composition: Aluminum

Color: Black

Length: 11 feet

SIGNAL HEADS

Lenses: LED lenses, 12-inches in diameter

Signal Housing Color: Black

Backboards (Black in Color)

Mounted Horizontally (Mounted Vertically only when mounted on poles)

LUMINAIRES

Luminaire and luminaire arms to be installed on all traffic signal poles, unless illumination is already provided on existing poles near signal pole installation.

Composition of Arm: Steel

Color of Arm: Black

Length of Arm: 15 feet

Wattage: 250-watt, High Pressure Sodium

CONTROLLER

As specified by the city. Current approved controller is Eagle EPAC 300.

CONTROLLER CABINET

Ground-mounted.

Color: Silver

Size: "P" Style

DETECTOR SYSTEM

Video: VIVDS

One camera installed on each intersectional approach mounted on mast arm.

Alternate installation location only if approved by city.

CONDUITS

PVC Schedule 40, gray in color.

All conduits installed under roadway shall be 4 inches in diameter.

All conduits extending to signal controller shall be 4 inches in diameter.

All conduits extending to signal pole shall be at least 3 inches in diameter.

All other conduits shall be of sufficient size to accommodate three times the amount of wiring (measured by adding the cross-sectional areas of the wires). In other words, the total of the cross-sectional areas of the individual wires called for in a specific wire run shall equal no more than 33 percent of the cross-sectional area of the conduit.

PEDESTRIAN SIGNALS

Color of Housing: Black

Display: “Hand” and “Walking Person” symbols.

Push Buttons: Conform to ADA requirements and have “Push Button for Green Light” signs (Sign R10-3b in the Texas Manual on Uniform Traffic Control Devices).

STREET NAME SIGNS

Street name signs shall be 16 inches in height with a green background and white letters and block numbers.

Street name signs shall be installed on all signal mast arms.

City may require internally-illuminated street name signs in place of green-and-white signs at specific intersections.

SIGNAL POLE FOUNDATIONS

All traffic signal pole foundations shall conform to TxDOT specifications. Size and depth of foundation dependant on length of mast arm.

DAMPERS

Dampers shall be installed on all mast arms that extend 40 feet in length or longer.

FLASHING OPERATIONS

All signals shall flash “red” during emergencies.

CONFIRMATION LIGHTS

Confirmation lights shall be installed on all signal poles to identify “red” signal indications on both left-turn and through signals.

SIGNS

All approaches having a separate, three-section signal head controlling left-turning traffic and having a green left-turn arrow display (and no green ball) shall have a LEFT TURN SIGNAL sign installed adjacent to the signal head.

All approaches having a five-section signal head permitting protected and permissive left turns (green ball and green arrow displays) shall have a LEFT TURN YIELD ON GREEN BALL sign. This sign shall be installed on the mast arm adjacent to the five-section signal head located furthest from the signal pole.

The LEFT TURN YIELD ON GREEN BALL sign also may be used where protected left-turn movements are NOT provided (i.e., no green arrow indication is provided) and there is a desire to emphasize the requirement to yield to oncoming traffic.

GROUND BOXES

A 15.25” X 28.25” X 20” ground box shall be installed at all terminations of 4-inch conduits that are placed beneath the roadways, and adjacent to the signal controller.

A 11.5” X 21” X 20” pull box shall be installed adjacent to signal poles, unless a larger ground box, installed at the termination of under-roadway conduits or adjacent to the controller, is placed in near proximity to the signal pole. Smaller ground boxes may be used to accommodate conduits containing single or a minimal number of wires (like power cable).

All ground boxes shall have concrete aprons.

POWER SOURCE

City of Bryan shall establish location of power source. At each intersection, power via a power cable shall be extended from meter pole to the signal controller by signal contractor. City of Bryan shall install wire from power source to meter pole.

PRIORITY CONTROL SYSTEM DETECTORS

Priority detectors shall be installed only on those approaches specified by the City of Bryan. 3M Opticom Priority Control Systems shall be used where specified.

WIRING

Wiring for signal heads, pedestrian signals and push buttons, confirmation lights, and illuminated signs (where required) shall be provided with either 7/c #14 stranded signal cable IMSA 19-1 or equivalent, 5/c #14 signal cable IMSA 19-1 or equivalent, or 3/c #14 signal cable IMSA 19-1 or equivalent.

Luminaires shall be wired with 3 THHN 1/c # 10 luminaire cables. Luminaire cable shall bypass controller and be connected directly into meter pedestal.

Power cable shall be 3/c #4 wire and shall be placed in a separate conduit.

Video cable shall be consistent with the cable recommended by the manufacturer of video system, and shall be placed in a separate conduit.

Model 739 Detector Cable for 3M Opticom Priority Control Systems shall be used for Priority Detectors.

Wiring provided for an individual signal pole (for signal heads, pedestrian signals, push buttons, confirmation lights, etc.) shall contain sufficient additional conductors for future use. At least 33 percent additional conductors should be provided.

All pedestrian signals shall be wired with a 5/c #14 signal cable. All pedestrian push button installations shall be wired with a separate 3/c #14 signal cable.